Stankus, R.P., Menon, P.K., Rando, R.J., Glindmeyer, H., Salvaggio, J.E., Lehrer, S.B. "Cigarette smoke-sensitive asthma: Challenge studies" J Allergy Clin Immunol **82: 331-338, 1988.**

SUMMARY: The effects of exposure to environmental tobacco smoke on pulmonary function were assessed in 21 subjects with asthma who claimed respiratory complaints (cough, shortness of breath, and chest tightness) on previous exposure to cigarette smoke. Exposure to mechanically produced tobacco smoke was performed in a static inhalation chamber for two 2-hour intervals at two distinct smoke levels (as measured by carbon monoxide, nicotine, and particulate levels). Seven of the 21 smoke-challenged subjects experienced a significant (>20%) decline in FEV1 during passive exposure to tobacco smoke. One of these seven subjects was nonatopic, whereas a second subject had a negative response to methacholine challenge. The smoke-challenge responses were reproducible in all seven reactive subjects. Increasing concentrations of tobacco smoke failed to elicit pulmonary changes in previously challenged, unreactive or "smoke-tolerant" subjects. There was no association between a positive smoke challenge and the presence of serum IgE antibodies and/or a positive immediate wheal-and-flare skin test to a tobacco leaf extract. Collectively, these studies document a significant decline in pulmonary function in a substantial percentage (33%) of a population of "smoke-sensitive" subjects with asthma exposed to environmental tobacco smoke. The data also dissociate this effect from tobacco-leaf hypersensitivity.